

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of ) Examiner: Scott Priebe  
Robert J. Levy et al. ) Art Unit: 1633  
Serial No. 10/656,068 )  
Filed: September 5, 2003 )  
For: "Methods and Compositions )  
for Enhancing the Delivery )  
of a Nucleic Acid to a )  
Cell" )

**REPLY TO OFFICIAL COMMUNICATION DATED SEPTEMBER 26, 2006**

The undersigned received an Official Communication dated September 26, 2006 concerning the above-identified patent application. The Official Communication indicates that the Examiner has been unable to perform a reasonable search of the prior art for the instantly claimed subject matter and has requested certain information regarding the invention pursuant to 37 CFR §1.105. The three items of requested information are set forth below.

At the outset, a shortened statutory response period of two (2) months was set forth in the September 26, 2006 Official Communication. Therefore, the initial due date for response is November 27, 2006, inasmuch as November 26, 2006 is a Sunday.

First, the Examiner has requested the "title, citation and copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as to developing the method of preparing denatured collagen at pH 3 and 100°C for 1 hour and the culture plates containing the denatured collagen." The Examiner has also requested a "concise explanation of the reliance placed on that

publication in the development of the disclosed subject matter."

At the outset, Applicants note that the MPEP at §704.11 states that:

Information which may be required under 37 CFR 1.105 is that information reasonably necessary to properly examine or treat a matter in a pending ... application filed under 35 U.S.C. 111... There must be a reasonable basis for the information required that would aid in the examination of an application or treatment of some matter. A requirement for information under 37 CFR 1.105 places a **substantial burden on the applicant that is to be minimized by clearly focusing** the reason for the requirement and the scope of the expected response. Thus, the **scope of the requirement should be narrowly defined**, and a requirement under 37 CFR 1.105 may only be made when the examiner has a reasonable basis for requiring information. [Emphasis added.]

Applicants respectfully submit that the Examiner's request for information clearly fails to satisfy §704.11 of the MPEP. Indeed, the request for every publication relied upon by Applicants along with a concise explanation of the reliance placed on the publication in the development of the disclosed subject matter is clearly not a minimized or narrow request. Furthermore, it is wholly unclear to Applicants how the latter request provides information that would "aid in the examination of an application," as required by §704.11 of the MPEP. Indeed, it is noteworthy that the Examiner's request is not listed as one of the exemplary requests provided at MPEP §704.11(a)(A)-(S).

However, in an effort to assist the Examiner in the examination of the instant application, Applicants submit herewith Jones et al. (J. Cell Science (1999) 112:435-445). Jones et al. teach denaturing type I collagen by boiling the collagen for one hour with 0.02 M acetic acid, neutralizing with 0.1 M NaOH, and then air-drying the denatured collagen to the bottom of a dish (see page 436-437). However, Jones et al. do not teach or suggest that this denatured collagen can enhance the efficiency of the delivery of a nucleic acid of interest to a cell as instantly claimed. Rather, Jones et al.

demonstrate that the activity of the tenascin-C promoter is increased on denatured collagen as compared to native collagen (see, e.g., Abstract and Figure 7). Notably, the instant application also describes novel methods of enhancing the delivery of a nucleic acid molecule to a cell by administering tenascin-C (see, e.g., the claims of the parent application, now U.S. Patent 6,919,208).

Second, the Examiner has requested information regarding how the denatured collagen on page 28 was actually prepared. Specifically, the Examiner has asked 1) what concentration of which acid was used to obtain pH 3 in the denaturation solution and 2) what materials, if any, other than collagen and the acid were present in the solution along with their concentration.

Applicants submit that the collagen was boiled in 0.17% glacial acetic acid (v/v) for one hour and then neutralized with 0.1N NaOH and 10xPBS. No other materials were present in the solution. The denatured collagen was allowed to air-dry on the desired surface.

Third, the Examiner wants to know if the "method used to prepare the denatured collagen and/or culture plates [was] known and described in the prior art." The Examiner has also requested that the location of any description in the prior art be identified.

As stated hereinabove, Jones et al. teach denaturing type I collagen by boiling for one hour with 0.02 M acetic acid, neutralizing with 0.1 M NaOH, and then air-drying the denatured collagen to the bottom of a dish. In contrast to the instantly claimed methods, Jones et al. do not teach or suggest that this denatured collagen can enhance the efficiency of the delivery of a nucleic acid of interest to a cell. Furthermore, there is considerable precedent that supports the position that Jones et al. does not constitute an anticipation of the instantly presented claims. For example, in In re Marshall, 198 U.S.P.Q. 344 (C.C.P.A. 1978), the Court of Customs and Patent Appeals reversed a §102 rejection of

claims directed to a weight control process using a oxethazine which was previously taught by the Physicians Desk reference (PDR) to be effective for the treatment of esophagitis, gastritis, peptic ulcer, and irritable colon syndrome. The rationale for the Court's decision was simply stated as follows:

"Nothing in the PDR remotely suggests taking oxethazine to lose weight. If anyone ever lost weight by following the PDR teachings it was an unrecognized accident. **An accidental or unwitting duplication of an invention cannot constitute an anticipation.**" [Citation omitted; Emphasis added].

Notably, this result is consistent with the reasoning of the U.S. Supreme Court which stated in Tilghman v. Proctor, 102 U.S. 707 (1881), that if a compound was "accidentally and unwittingly produced, whilst the operators were in pursuit of other and different results, without exciting attention and without it being known what was done or how it had been done, it would be absurd to say that this was an anticipation."

More recently, a similar outcome was reached in Rapoport v. Dement, 59 U.S.P.Q.2<sup>nd</sup> 1215 (Fed. Cir. 2001), an interference in which the subject matter at issue was a method for the treatment of sleep apnea. Specifically, the interference count called for treating sleep apnea by administering a therapeutically effective amount of certain azapirone compounds, such as buspirone. The PTO Board of Appeals found that a prior publication disclosing the use of buspirone to treat anxiety in patients suffering from sleep apnea did not disclose administration of buspirone for the treatment of patients suffering from sleep apnea, per se. This determination was sustained on appeal to the Federal Circuit. The Board's decision and the Federal Circuit's affirmance thereof were based on the finding that treatment of the sleep apnea disorder itself is distinct from treatment of anxiety and other secondary symptoms related to sleep apnea. This finding was, in turn, based on the interpretation that the claim terminology "treatment of sleep apneas" should be

treated as a claim limitation. Because the cited prior art publication failed to disclose treatment of the underlying sleep apnea disorder, as opposed to the symptoms thereof, it was held not to anticipate the count. Indeed, the Federal Circuit observed in this regard that there was no disclosure in the publication of tests in which buspirone was administered to patients suffering from sleep apnea "with the intent to cure the underlying condition." Id. at 1221.

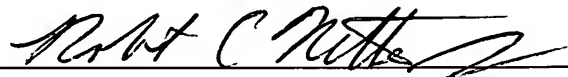
In view of the foregoing authorities, the conclusion is inescapable that Jones et al. fail to disclose a method of increasing the delivery of a nucleic acid molecule to a cell as instantly claimed.

It is believed that the present submission is fully responsive to the requests made by the Examiner pursuant to 37 CFR §1.105 in the paper dated September 26, 2006.

Pursuant to MPEP §704.14(d), Applicants submit herewith Form PTO/SB/08B to have the above citation entered in the record. In an initial reply to a request for information under 37 CFR §1.105, the fee and certification requirements of 37 CFR §§1.97 and 1.98 do not have to be satisfied (MPEP §704.14(d)). The Examiner is respectfully requested to confirm receipt and consideration of the cited reference by initialing and returning a copy of the attached Form PTO/SB/08B.

Applicants respectfully submit that the present invention represents an advance in the art of nucleic acid delivery. Accordingly, early and favorable action on this application is earnestly solicited.

Respectfully submitted,  
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Enclosure: Jones et al., J. Cell Science (1999) 112:435-445  
Form PTO/SB/08B